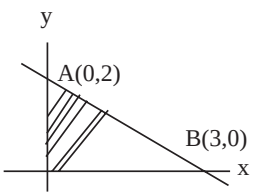
LINEAR PROGRAMMING

1. Any line belonging to the system of parallel lines of objective function is called _____
2. If none of the feasible solutions maximise or minimise the objective function, then the problem has _____
3. A line divides the plane in to _____ sets.
4. If x>0, y<0 then the point (x,y) lies in _____ quadrant (June 2008)
5. If $P = \frac{1}{4}x + \frac{2}{3}y$ then the value of P at the point (4,9) is _____
6. The parallel lines that are determined by the objective function are called _____
7. If the isoprofit line moves away from the origin then the value of the objective function 'f' is _____
8. Polygon represented by the inequalities
   $x \geq 1, y \geq 1, x \leq 3, y \leq 3$ is _____
9. The solution set of constraints of linear programming is called _____
10. A line segment joining the points P and Q, where P, Q $\in$ x such that $\overline{PQ} \subseteq X$ then X is called _____ set
11. If the values of the expression f = ax+by is attained maximum or minimum at one of the vertices that is called _____
12. The expression ax+by which is to minimized or maximized is called _____
13. The isoprofit line coincides with the sides of polygon then it has _____ solution.
14. Any point (x,y) in the feasible region gives a solution to LPP is called _____
15. If the point (-3,2) lies on 3x-5y+k<0 then the maximum value of K is _____
16. f = A X + BY is called _____
17. The shaded region represents the inequation is _____



18. The solution set of $x \geq y$ and $x \leq y$ is _____
19. The point on Y axis is _____
20. The value of x+y should not be less than 8' can be written as _____
21. The slope of Y-axis is _____
22. Isoprofit lines are _____
23. The profit of a chair is Rs 10 and table is Rs 25. A man purchased x chairs and y tables. Then the total profit is _____
24. The c>0 then ax+by+c <0 represents the region _____
25. If a<0 then the point (4,-a) lies in _____ quadrant.
26. The knowledge of Linear Programming helps to solve the problem in _____
27. The maximum (or minimum) value of f occurs on atleast one of the vertices of the feasible region. This is the statement of the _____ theorem of Linear Programming.
28. If Q_1 and Q_2 are first and second quadrants then $Q_1 \cap Q_2$ _____
29. If f = ax+by is objective function, then the line ax+by = c is called _____ line
30. If x = 0 then (x,y) is a point on _____ axis.
31. The value of f = 2x+3y at (1,2) is _____
32. Intersection of $x \geq 0, y \geq 0$ is _____
33. The value of an objective function

    $f = \frac{1}{3}x + \frac{2}{3}y$ at (0,9) is _____

KEY

1. Isoprofit lines	2. no solution	3. three disjoint sets	4. IV (or) Q_4	5. 7	6. Isoprofit lines
7. Maximum	8. Square	9. Feasible region	10. Convex set	11. Fundamental theorem of L.PP	
12. Objective function		13. Infinite	14. feasible solution	15. K = 18	
16. objective function	17. 2x+3y≤6	18. x = y	19. (0,a)	20. x+y≤8	21. undefined
22. Parallel lines	23. 10x+25y	24. closed half plane containing zero		25. Q_1	
26. Business, Industry and Transportation		27. Fundamental	28. ϕ (or) positive y-axis	29. isoprofit line	
30. y-axis	31. 8	32. Q_1(or) I quadrant.	33. 6		

Important Questions

5 Marks

1. Maximize f = 5x+7y, subject to the conditions $2x + 3y \leq 12$, $3x + y \leq 12$, $x \geq 0$, $y \geq 0$?
2. Minimise f = x+y, subject to the conditions $x + y \geq 6$ and $2x + y \geq 8$, $c \geq 0$, $y \geq 0$?
3. Maximize f = 3x + y, subject to the constraints $8x + 5y \leq 40$, $4x + 3y \geq 12$, $x \geq 0, y \geq 0$?

4 Marks

1. A sweet shop makes gift packets of sweets, combines two special types of sweets A and B which weight 7kg, atleast 3kg of A and no more that 5kg of B should be used. The shop makes a profit of 15 on A and 20 on B per kg, Determine the product mix so as to obtain maximum profit. (graph not necessary)?

2. A shop keeper sells not more than 30 shirts of each colour. Atleast twice as many white ones are sold as green ones. If the profit on each of the white be Rs. 20 and that of green be Rs. 25. How many of each kind be sold to give him a maximum profit?

2 Marks

1. State the polygonal region represented by the systems of inequations $x \geq 0$; $y \geq 0$; $x + y \leq 1$.
2. Define convex set and iso-profit Line.
3. Draw the graph of the following inequation $2x + 3y \leq 6$.
4. Shade the region represented by the inequation $4x + 3y \geq 12$.
5. Define objective function and Feasible region.
6. From the given vertices (0,0),(2,3),(3,0) and (0,5) at which point the objective function 2x+3y will have maximum value.

1 Mark

1. Define L.P.P.?
2. Define isoprofit line?
3. Define convex set?
4. What is an objective function?
5. Define feasible region?
6. At which of the point A (2,4),B (0,8) the function f(x) = 4x-y is minimum?
7. What Kind of polygonal region do you get from the system of inequations $x \geq 0$, $y \geq 0$, $x + y \leq 8$? Write the vertices?